Photometric Test Report

Relevant Standards

☑IES LM-79-2024

☑ANSI C82.77-10:2020

Prepared For

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Project Number

DLF2602104

Report Number

DLF2602104-3a

Test Date

2026/2/5

Issue Date

2026/2/6

Test By	Prepared By	Approved By
Hengshan Li	Wangzun Zhu	Kevin Jia

1.0 Test Summary

DLC Technical Requirements v6.0

Linear Replacement Lamps - 4' T8 Lamps- 3-lamp External Driver (UL Type C) Lamp				
Requirement Category	**Test Method**	**Requirements**		**Test value**
Intergrating Sphere				
Total Harmonic Distortion (A%) (THD & PF - section 4.3)	ANSI C82.77-10: 2020	20.00%	120V	4.27%
		20.00%	277V	5.36%
Power Factor (THD & PF - section 4.3)	ANSI C82.77-10: 2020	0.9	120V	0.998
		0.9	277V	0.974
Allowable CCTs* (K) (Integrating Sphere - Section 4.1)	IES LM-79-2024	7 step	3045±175	3048
		4 step	3045±100	
Chromaticity (Duv) (Integrating Sphere - Section 4.1)	IES LM-79-2024	7 step	0.0001±0.0060	0.00053
		4 step	0.0001±0.0033	
Minimum CRI (Integrating Sphere - Section 4.1)	IES LM-79-2024 CIE 13.3-1995	⩾80		83
Minimum R9 (Integrating Sphere - Section 4.1)	IES LM-79-2024 CIE 13.3-1995	⩾0		7
Minimum Rf (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-24	⩾70		85
Minimum Rg (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-24	⩾89		95
Minimum IES Rcs,h1 (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-24	-12%⩽IES Rcs,h1⩽+23%		-11%

2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2026/2/5	L48T8/830/15P-XT (3H)	DLF2602104-C1
2	THD and PF Test	2026/2/5	L48T8/830/15P-XT (3H)	DLF2602104-C1

Remark(If any)
1. This report shall not be used by the client to claim product endorsement by NVLAP, NIST or any agency of the US government.
2. The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products. This report does not imply that the product(s) has met the criteria for certification.

3.0 DUT Description

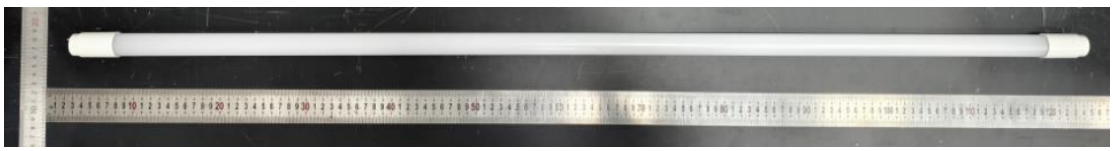
Model Number: L48T8/830/15P-XT (3H)

Electrical Rating: 120-277V,50/60Hz

Received Date: 2026/2/5

External Driver Model: VPL100-4C

Photos of DUT Characteristics



4.0 Test Results

4.1 Integrating Sphere Test - 3000K

Model No.	L48T8/830/15P-XT (3H)	Sample ID.	DLF2602104-C1
Opreate time (Min.)	90	Stabilization time (Min.)	45
Temperature (°C)	25.3	Humidity (%RH)	56.0

Test Method
The samples were tested according to the IES LM-79-2024.
Photometric paramters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature and relative humidity condition inside the sphere was maintained at 25º C ± 1.2º C and 10% - 65% RH.
The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere.
The voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ±0.2 percent under load.
The sample was measured using 4π geometry and operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

Test Result

Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
120.04	60	0.142	17.0	0.998
277.04	60	0.063	16.9	0.974

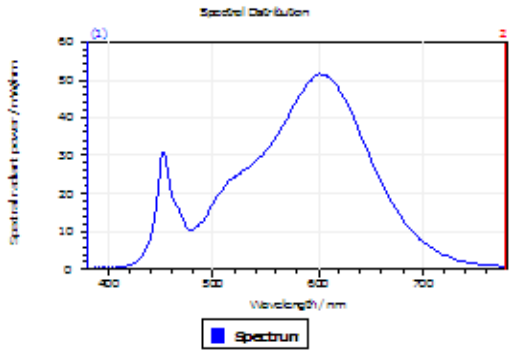
Test Result

CCT (K)	CRI	R9	Duv
3048	83	7	0.00053

Rf	Rg	IES Rcs,h1	Light Output (lm)	Luminous Efficacy (lm/W)
85	95	-11%	2523	148.4

4.1 Integrating Sphere Test

Results



Spectral Distribution

Spectral values

DominantWavelength	582.43 nm
Purity	0.518
PeakWavelength	602.97 nm
Radiant Power	7.601 W
Width50%:	

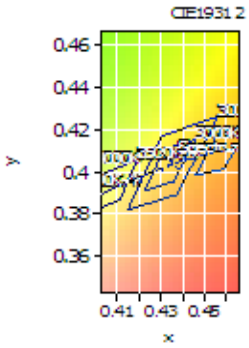
Color Coordinates

Correlated Color Temperat 3048 K

x:	0.4343	u:	0.2487	u':	0.2487
y:	0.4046	v:	0.3474	v':	0.5211

CRI01	81.7	CRI09	6.9
CRI02	91.9	CRI10	81.6
CRI03	95.7	CRI11	80.7
CRI04	80.8	CRI12	70.6
CRI05	81.8	CRI13	84.2
CRI06	90.3	CRI14	98.3
CRI07	82.7	CRI15	73.8
CRI08	59.0	CRI16	70.7

ResultsCRI 83.0

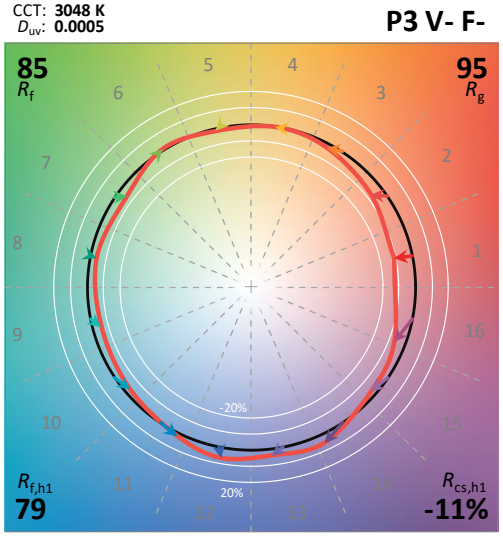


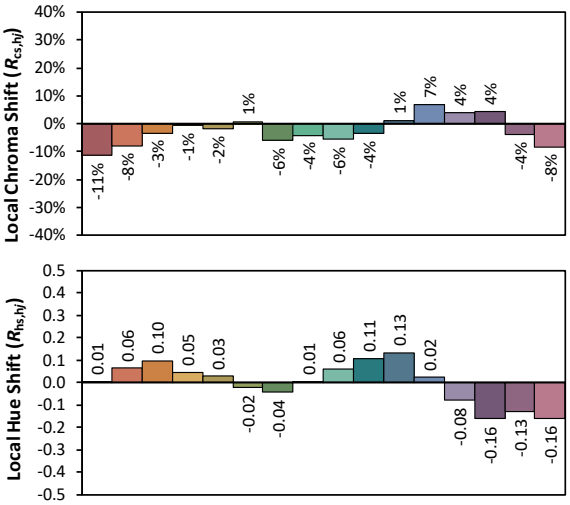
PlanckDistance 5.3E-004

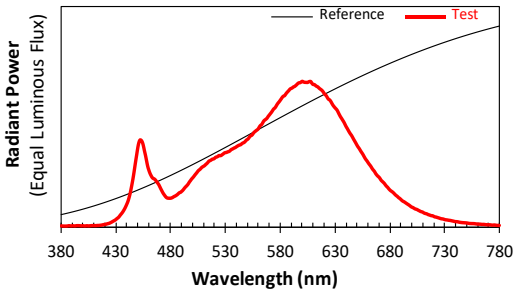
4.1 Integrating Sphere Test

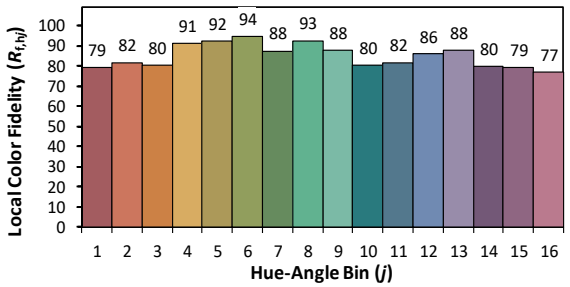
ANSI/IES TM-30-24 Color Rendition Report

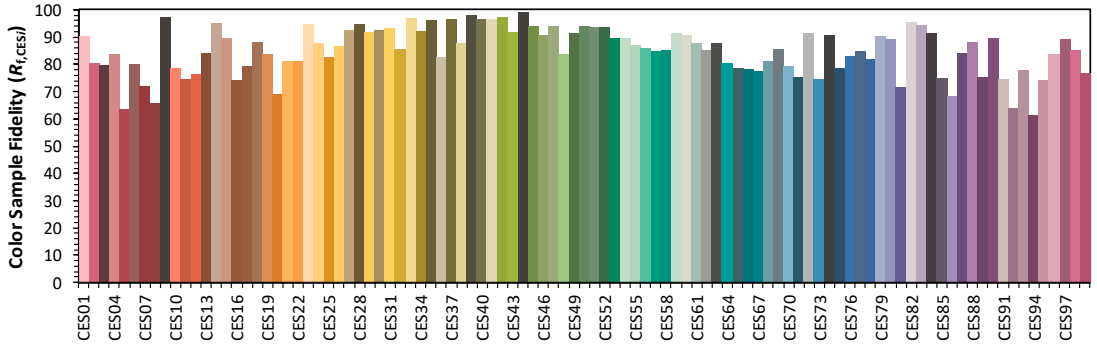
Source:	DLF2602104-3a	Make:	Espen Technology Inc.
Date:	2026/2/5	Model:	L48T8/830/15P-XT (3H)
Note:	N/A	Other:	N/A











4.0 Test Results

4.2 THD and PF Test

Model No.	L48T8/830/15P-XT (3H)	Sample ID.	DLF2602104-C1
Temperature (°C)	25.3	Humidity (%RH)	56.0

Test Method
The samples were tested according to the ANSI C82.77-10:2020. The ambient temperature shall be maintained at 25º C ± 1.0º C and 10% - 65% RH. The sample measurements were made using a digital power meter and power supply. The sample was operated at rated voltage and was stabilized before measurement. The total harmonic distortion were calculated.

Test Results					
3000K					
Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD
120.04	60	0.142	17.0	0.998	4.27%
277.04	60	0.063	16.9	0.974	5.36%

5.0 Equipment Information

Test Equipment			
Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
DLF107	Integrating Sphere System	2025/12/10	2026/12/9
DLF108	Auxiliary Lamp	2025/12/10	2026/12/9
DLF122	Measurement Standard Lamp Standard Lamp Type: Tungsten, Omni-derectional	2025/12/10	2026/12/9
DLF116	AC Power Source	2025/12/8	2026/12/7
DLF516	Power Meter	2025/12/8	2026/12/7
DLF112	Temperature Recorder	2025/12/15	2026/12/14
DLF114	Temperature & Humidity Datalogger	2025/12/11	2026/12/10
DLF521	Measurement Standard Lamp Standard Lamp Type: Tungsten, Omni-derectional	2025/12/10	2026/12/9
DLF101	Goniophotometer	2025/12/10	2026/12/9
DLF511	AC Power Source	2025/12/8	2026/12/7
DLF512	AC Power Source	2025/12/8	2026/12/7
DLF513	AC Power Source	2025/12/8	2026/12/7
DLF507	DC Power Source	2025/12/8	2026/12/7
DLF111	Temperature & Humidity Datalogger	2025/12/11	2026/12/10
DLF119	Power Meter	2025/12/8	2026/12/7
DLF530	Hot-wire anemometer	2026/1/26	2027/1/25
DLF129	Clock	2025/9/4	2026/9/3

********** End of Test Report**********